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Application No.: 10/531,451

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Previously presented) A hermetic compressor comprising:

an electric motor element;

a compression element driven by the electric motor element;

a closed container accommodating the electric motor element and compression element; and

a refrigerant contained in the closed container,

the compression element comprising:

a shaft having an eccentric shaft body and a main shaft body;

a cylinder block having a compression chamber;

a piston moving reciprocally in the compression chamber;

connecting means for connecting the piston and the eccentric shaft body; and

a balance weight formed on the shaft,

wherein the piston is positioned on a horizontal extension of the balance weight; and

wherein the balance weight is formed in such a shape that the distance between the outer circumference of the balance weight and the piston is substantially constant in the closely approaching interval of the balance weight and piston.

2. (Currently amended) The hermetic compressor of claim 1,

wherein supposing axial center of the main shaft body to be origin, x-coordinate and y-coordinate of outer circumference of the balance weight are substantially expressed as follows:

~~$x = [s \cdot \cos(360° - \theta) + L \cdot \cos\{(\sin^{+}(s \cdot \sin(360° - \theta)/L)\} + C - \alpha] \cdot \cos(360° - \theta)$~~

~~$y = [s \cdot \cos(360° - \theta) + L \cdot \cos\{(\sin^{+}(s \cdot \sin(360° - \theta)/L)\} + C - \alpha] \cdot \sin(360° - \theta)$~~

$x = [s \cdot \cos(360° - \theta) + L \cdot \cos\{\sin^{-1}(s \cdot \sin(360° - \theta)/L)\} + C - \alpha] \cdot \cos(360° -$

$$y = [s \cdot \cos(360° - \theta) + L \cdot \cos\{\sin^{-1}(s \cdot \sin(360° - \theta) / L)\} + C - \alpha] \cdot \sin(360° - \theta)$$

where s: distance between axial center of main shaft body and axial center of eccentric shaft body,

L : pitch length of connecting means,

C : skirt length of piston,

α : distance between outer circumference of balance weight and piston, and

θ : rotation angle of eccentric shaft body.

3. (Previously presented) The hermetic compressor of claim 1,

wherein the distance between outer circumference of the balance weight and the piston is 2 mm or less.

4. (Previously presented) The hermetic compressor of claim 1,

wherein the balance weight is formed by either sinter alloy or press processing of iron plate.

5. (Previously presented) The hermetic compressor of claim 1,

wherein the refrigerant is R600a.

6. (Previously presented) The hermetic compressor of claim 1, further comprising:

a subsidiary shaft body formed coaxially with the main shaft body; and

a subsidiary bearing for supporting the subsidiary shaft body,

wherein the balance weight is provided at the end of the eccentric shaft body side of the subsidiary shaft body.

7. (Previously presented) The hermetic compressor of claim 1,

wherein the electric motor element is driven by inverter at plural operating frequencies including at least an operating frequency of less than the power source frequency.

8. (Original) The hermetic compressor of claim 7,

wherein the operating frequency includes at least a frequency of less than 30 Hz.

9. (Previously presented) The hermetic compressor of claim 2,

wherein the distance between outer circumference of the balance weight and the piston is 2 mm or less.

10. (Previously presented) The hermetic compressor of claim 2,

wherein the balance weight is formed by either sinter alloy or press processing of iron plate.

11. (Previously presented) The hermetic compressor of claim 2,

wherein the refrigerant is R600a.

12. (Previously presented) The hermetic compressor of claim 2, further comprising:

a subsidiary shaft body formed coaxially with the main shaft body; and

a subsidiary bearing for supporting the subsidiary shaft body,

wherein the balance weight is provided at the end of the eccentric shaft body side of the subsidiary shaft body.

13. (Previously presented) The hermetic compressor of claim 2,

wherein the electric motor element is driven by inverter at plural operating frequencies including at least an operating frequency of less than the power source frequency.

14. (Previously presented) The hermetic compressor of claim 13,

wherein the operating frequency includes at least a frequency of less than 30 Hz.